C2PC Measures of Effectiveness (MOE)
Version 2.0

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Objective

- Develop an injector that provides the Commander an "actionable" sitmap in C2PC by monitoring and alerting on key events during the execution of his battle plan.

    – Focus on <u>improved unit reporting</u> via the C4I architecture.
    – Focus on <u>increased use of C2PC</u>
    – Focus on <u>maintaining the CTP</u>
    – Focus on the <u>timeliness of the CTP</u>
    – Focus on the <u>accuracy of the CTP</u>
    – Focus on the <u>completeness of the CTP</u>

Increase the Commander's confidence in the C2PC CTP.

The MOE Task

- Measure of Effectiveness (MOE) injector for C2PC.
- Monitoring Agents/Knowledge Management rule sets for monitoring the execution of the battle plan using C2PC application.
- Make C2PC more useful for MAGTF Commanders and his battlestaffs/action officers!
- Active CTP graphics alert for critical events and decision points across the battlefield.
- Maximize C2PC API and current injector features

Commander's tool for monitoring the battlespace will inherently increase the use of C2PC

C2PC MOE Feature Set

- NAI/DP/LD Alerts
- Track Attribute Agent
- Duplicate Track Agent
- Missing Tracks Agent
- Brevity Code Agent
- Key Track Agent
- Movement to Objective
- C2PC Network Status
- Alert Logs

C2PC MOE Development

- V1
  - Currently on IOW 3.6
  - Stand alone application outside C2PC
  - Access via C2PC Measures of Effectiveness menu in C2PC Menu Group
  - Designed for C2PC 5.8.2 but works with C2PC 5.9.0.3

- V2
  - Projected for IOW 3.6.5
  - Fully embedded C2PC Injector
  - Greatly enhanced
  - Designed for C2PC 5.9.0.3

C2PC MOE V1 Application

- Abstract Requirements/Capabilities
  - Develop a simple User Interface for allowing the Watch Officer/Chief to select when and which "rules" to activate.
  - Passively monitor the C2PC databases for the critical events to happen and report those events as they occur.
  - Allow independent views and rules for each action officer.
  - Look at what is "NOT" there as well as what is there.
  - Monitor your CTP network.
  - Develop "active" graphical objects to monitor the battlespace for events.
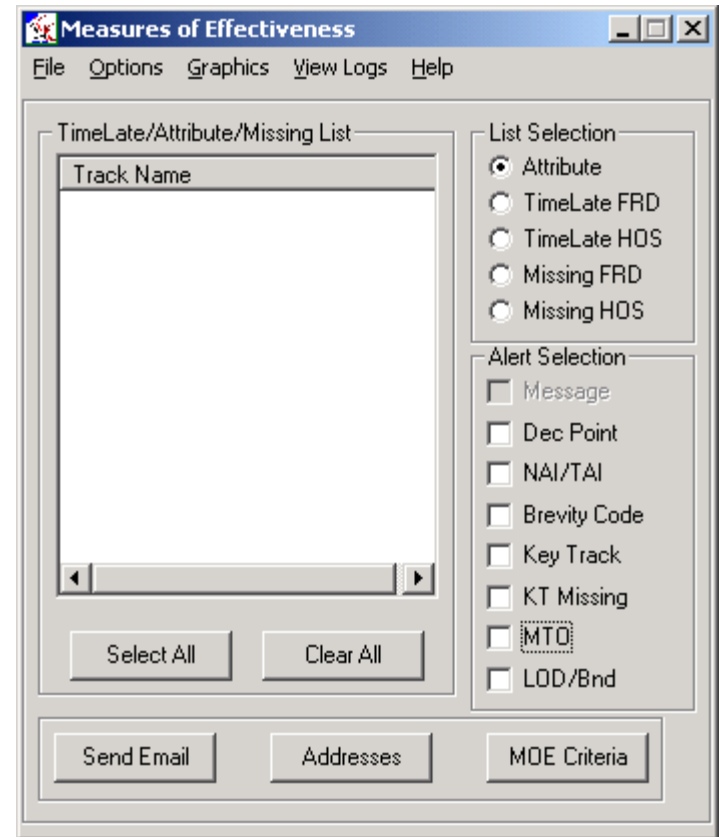
NAI/TAI Agent

NAI/TAI – Named Areas of Interest/Target Area of Interest – is a simple utility that the S-2 can use to monitor a NAI/TAI for enemy activity.

You can choose the desired color and shape (circle or box) for the NAI/TAI. MOE monitors for any HOS/SUS unit breaching or leaving the geometry of the NAI/TAI.

NAI/TAI uses pop-up dialogs and, if desired, sound to alert events.
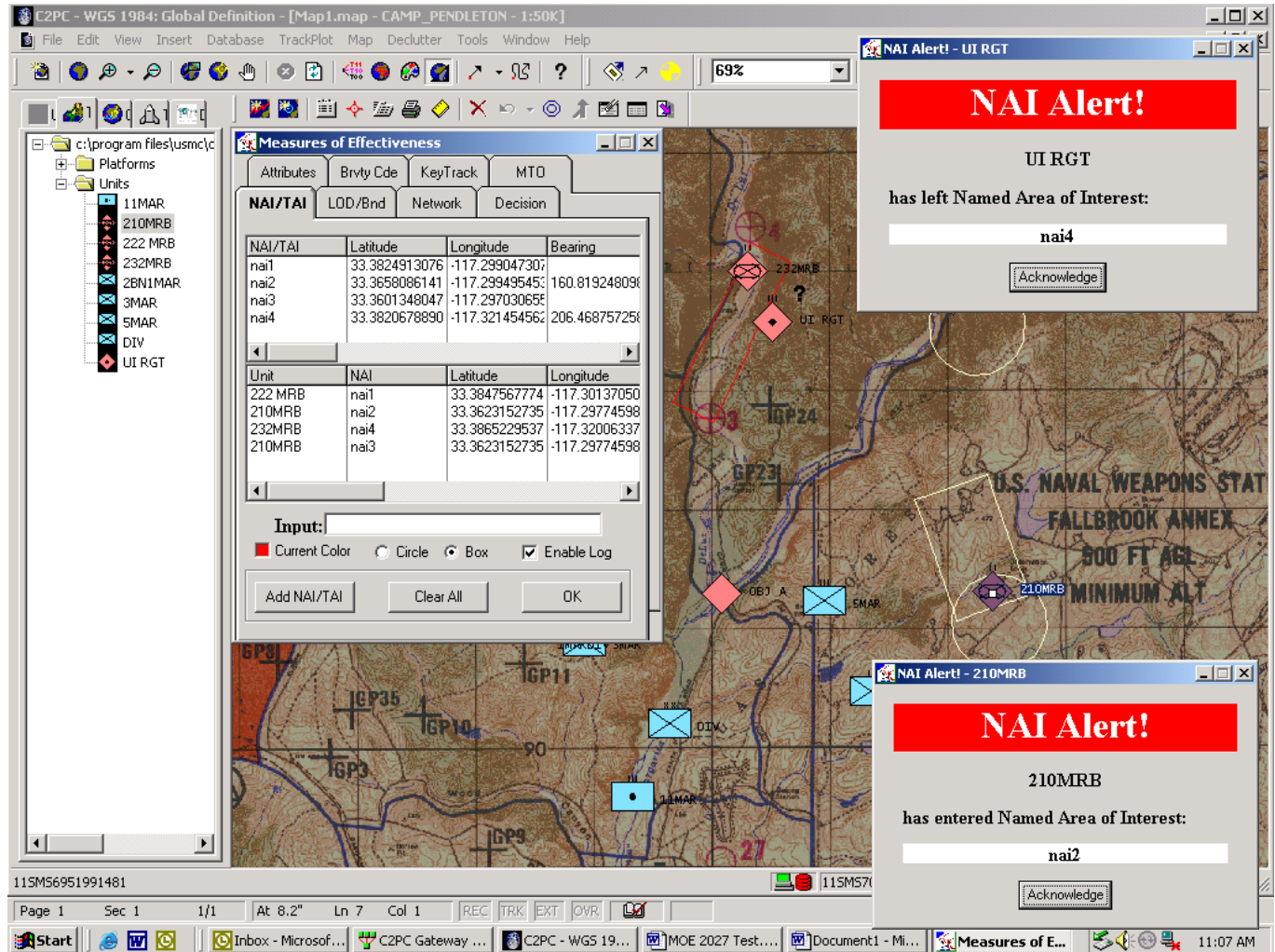
C2PC MOE V2 Injector

- Requirements/Capabilities
  - Develop a simple User Interface for allowing the Watch Officer/Chief to select when and which "rules" to activate.
  - Passively monitor the C2PC databases for the critical events to happen and report those events as they occur.
  - Allow independent views and rules for each action officer.
  - Assess what is "NOT" there as well as what is there.
  - Evaluate beyond "operator's current map view"
  - Monitor CTP reporting network.
  - Develop "active" graphical objects to monitor the battlespace for events.
  - Implement easy methods for enabling and disabling alert pop-ups.
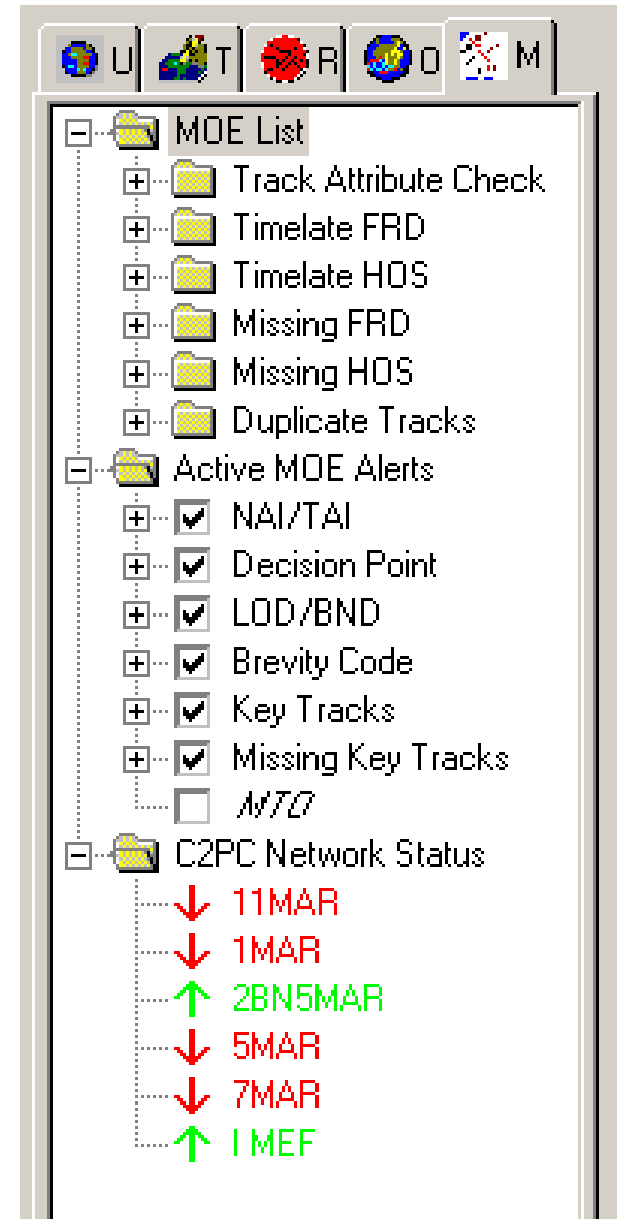
TimeLate and Attribute Agent

Action Officers can specify Timelate and attribute reporting criteria.

MOE "watches" the database and reports which FRIENDLY and HOSTILE unit tracks reports are too old and which friendly units are not reporting the desired data.

When updated, the tracks will automatically be removed from the list.

Ideally, these lists would be empty which means all the tracks are reporting the right data and are up to date.

These tracks are NOT reporting their combat effectiveness

These friendly tracks are more than 10 minutes old.

These hostile tracks are more than 20 minutes old.
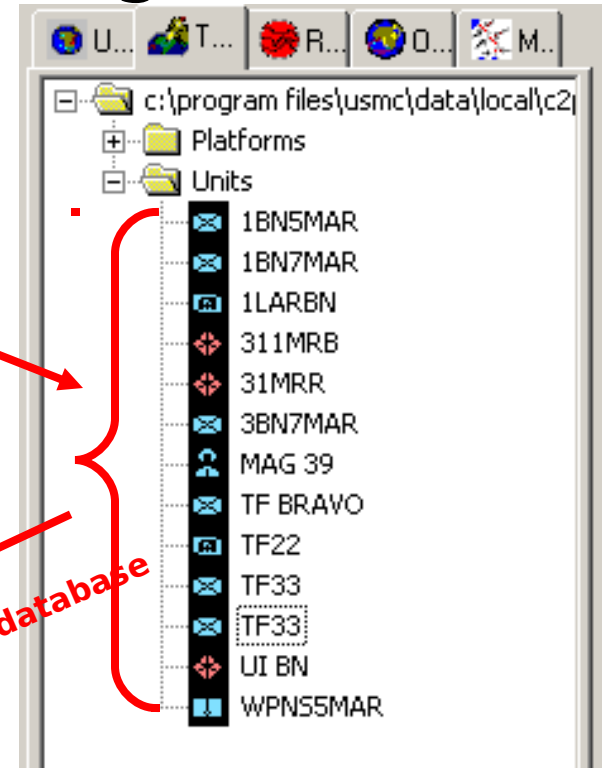
Missing Tracks Agent
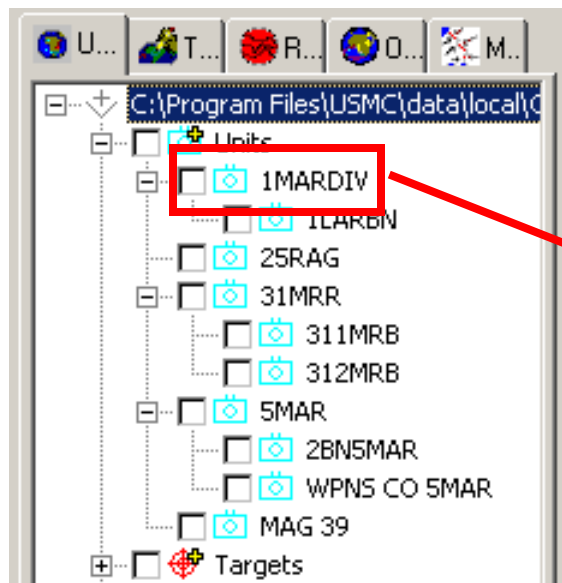
Units Injector – Planned MAGTF Organization

The current CTP is continuously checked against the pre-planned "Units" database for the MAGTF organization and Threat OOB.
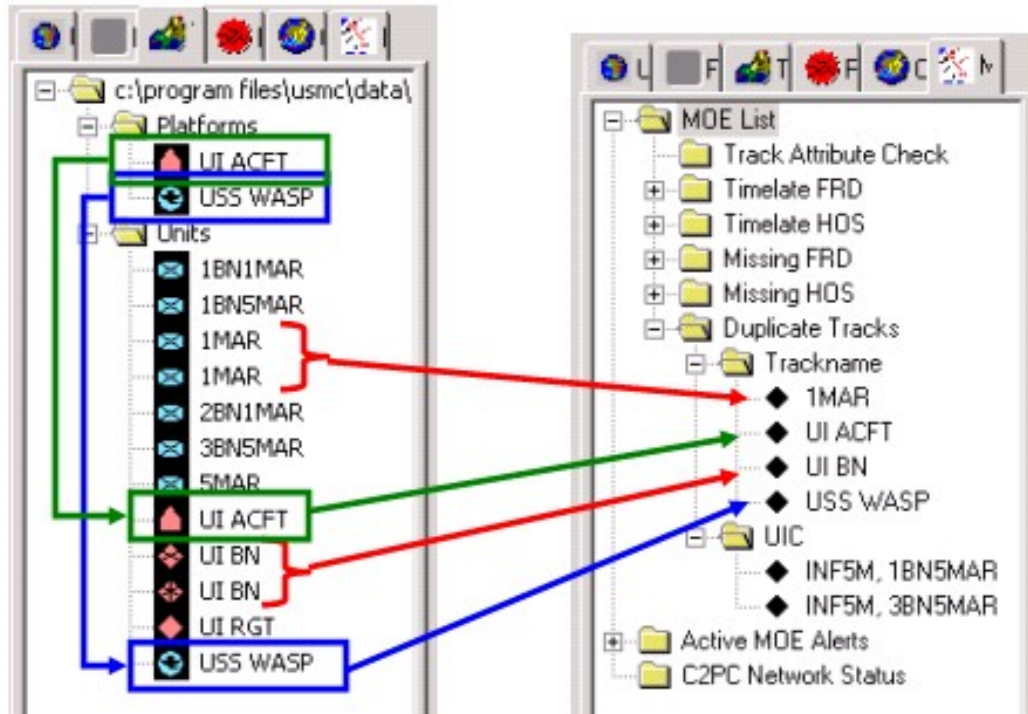
not in unit database
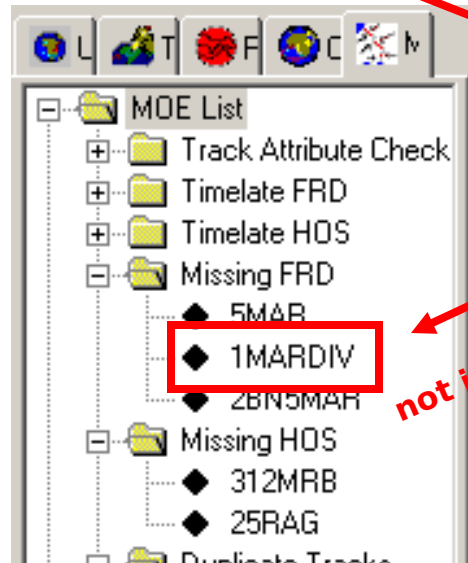
**Missing Track agent identifies FRIENDLY and Hostile tracks that are NOT in the current track database.**

TrackPlot Injector – shows units currently in the CTP

Duplicate Tracks Agent

Duplicate Tracks Agent monitors the unit track database and lists units that have the same track name (long name), Unit Identification Code (UIC) and/or the same Unit Reference Number (URN). In these example, several unit and platform tracks have duplicate names. Unless you are constantly monitoring the track lists in the TrackPlot Injector, then you would not easily detect the discrepancies. Similarly, you would have to view the properties of each track to detect duplicate UIC and or URN entries. These C2PC MOE features aid in ensuring the track reporting is
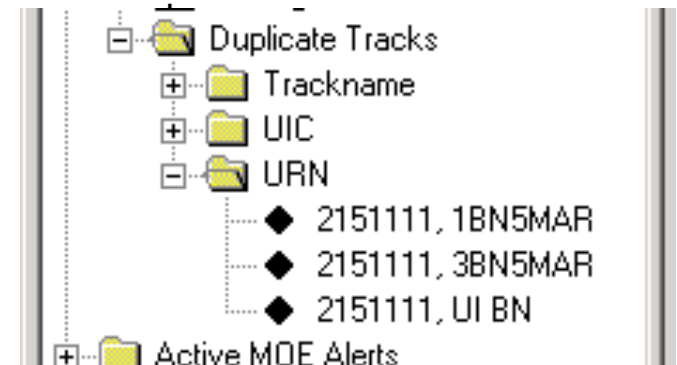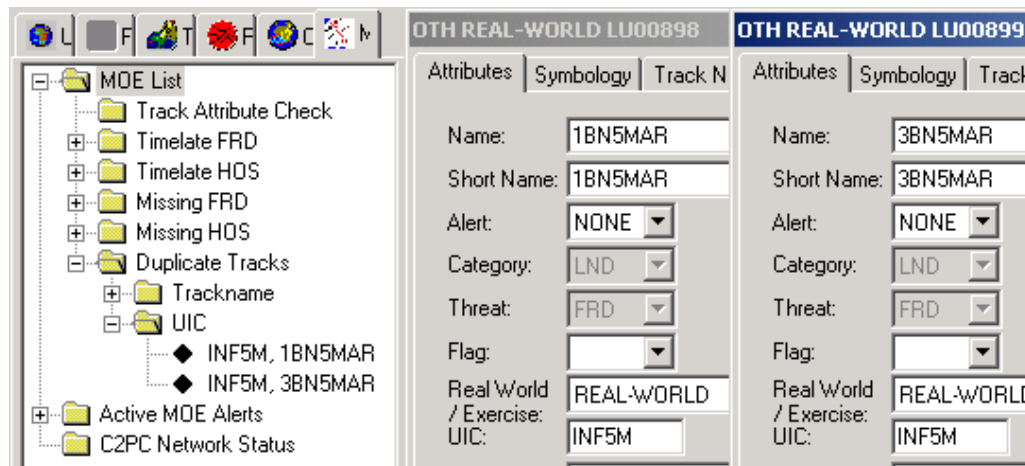
NAI/TAI Agent

NAI/TAI – Named Areas of Interest / Target Area of Interest – is a simple utility that the S-2 can use to monitor a NAI/TAI for hostile track activity.

Use C2PC Overlays (circle, rectangle or box) for the NAI/TAI. MOE monitors for any HOS/SUS unit tracks breaching or leaving the geometry of the NAI/TAI.

NAI/TAI uses pop-up dialogs and, if desired, sound to alert events.

Each NAI/TAI alert is recorded in a history log.

Link MOE to current C2PC Overlay NAI objects.

DP Agent

DP – Decision Point – is a simple utility that the S-2/3 can use to create and monitor a DP for any friendly or hostile unit(s) to trip. When tripped, an alert with an associated DP "actions" file can be displayed.

DP uses the C2PC Overlay Tactical Point Decision Point, but operators can add a radius to expand the DP "trip" boundary. Any type of file or URL may be associated with the DP to provide actions to take when the DP is tripped.

Each DP trip event is recorded in a history log.

DP Alert!

3BN7MAR

has entered a Decision Point:

COA1.DP A

Acknowledge   Actions File

DP1actions.txt - Notepad

File Edit Format Help

Take the following actions when DP 1 is tripped.

5MAR will establish a blocking force vic 11SMS6668589620

11MAR will engage en unit at firing points GP3, GP14 and GP35

etc.

DP Action File can be any MS Windows/Office file.

DP Alert!

31MRR

has entered a Decision Point:

COA1.DP B

Acknowledge   Actions File

H+6 Course of Action

DP Action File can be a web page or site

LOD/Bnd Agent

LD/Bnd – Line of Departure/Boundary – is a MOE agent the S-3 uses to assign and monitor when a specified friendly unit(s) crosses a specific line of departure, phase line or limit of advance.

LD uses the C2PC Overlay Tactical Line graphics for LD, LD/LC, LOA and PL. As units cross a designated control measure that mission is alerted and removed from the left panel folder.

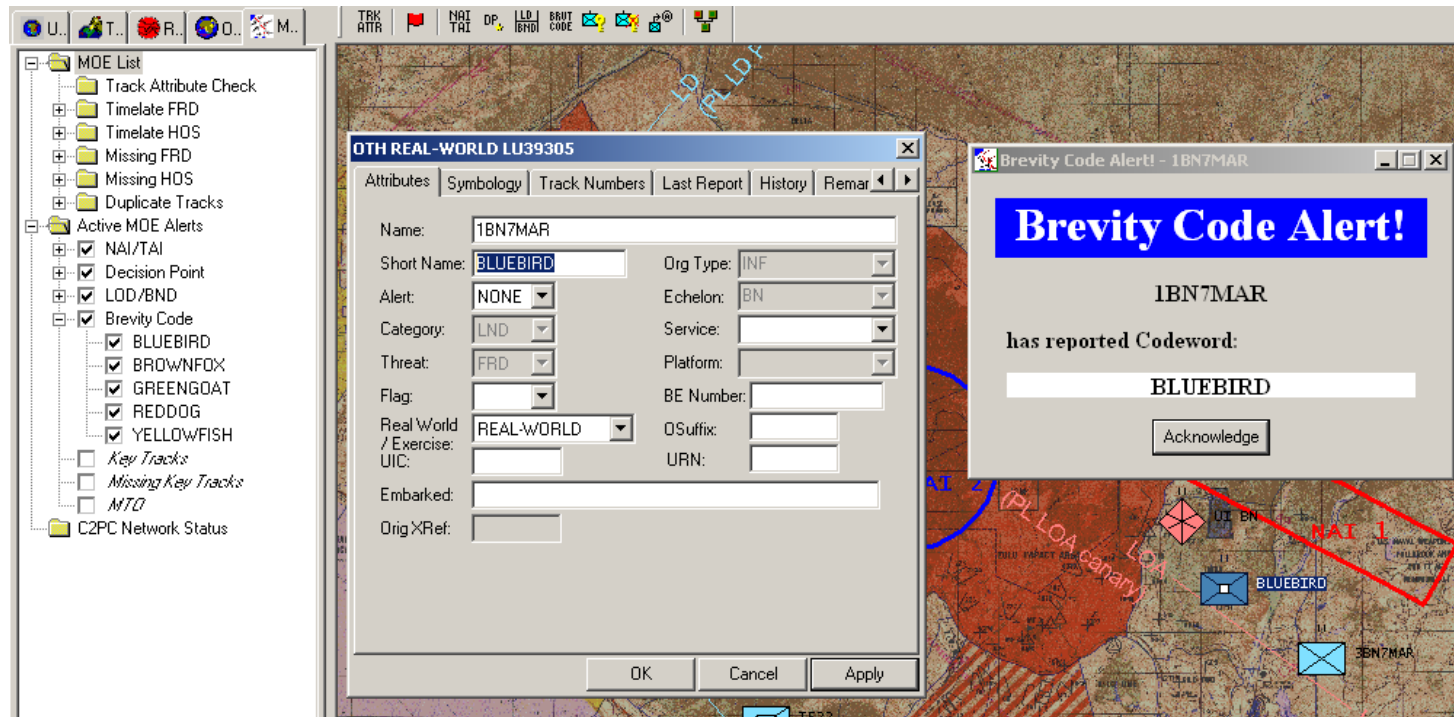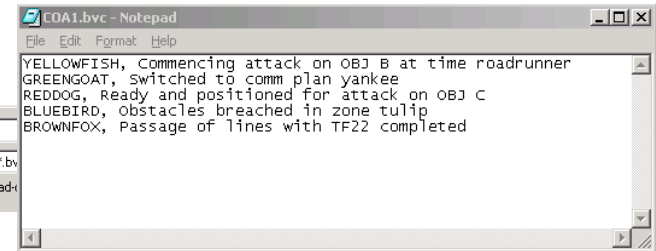Each LD alert is recorded in a history log.

Brevity Code Agent

Brevity Codes are imported from a file or entered in MOE. A unit reports the Brevity Code changing by his track's "Shortname" field to the Brevity Code which is automatically "broadcast" across entire MAGTF C2PC Network.

C2PC MOE monitors the active track database for Brevity Code reporting.

C2PC MOE pops-up an Alert window when a Brevity Code is detected.

The event is also recorded in the Brevity Code Log

Brevity Code

Brevity Code List

Unit	Brevity Code	Time Of Report

Input:

☑ Enable Log

Import Brv. Code   Clear All   OK

Open

Look in: Moe

- Sample Alert WAV files
- Sample Overlays
- Sample Units udb file
- COA1.bvc

File name:

Files of type: Brevity Code (*.bv

☐ Open as read-

COA1.bvc - Notepad

File Edit Format Help

```
YELLOWFISH, Commencing attack on OBJ B at time roadrunner
GREENGOAT, Switched to comm plan yankee
REDDOG, Ready and positioned for attack on OBJ C
BLUEBIRD, Obstacles breached in zone tulip
BROWNFOX, Passage of lines with TF22 completed
```

MOE List
- Track Attribute Check
- Timelate FRD
- Timelate HOS
- Missing FRD
- Missing HOS
- Duplicate Tracks

Active MOE Alerts
- ☑ NAI/TAI
- ☑ Decision Point
- ☑ LOD/BND
- ☑ Brevity Code
  - ☑ BLUEBIRD
  - ☑ BROWNFOX
  - ☑ GREENGOAT
  - ☑ REDDOG
  - ☑ YELLOWFISH
  - ☐ *Key Tracks*
  - ☐ *Missing Key Tracks*
  - ☐ *MTO*
- C2PC Network Status

OTH REAL-WORLD LU39305

Attributes | Symbology | Track Numbers | Last Report | History | Remar

Name: 1BN7MAR
Short Name: BLUEBIRD   Org Type: INF
Alert: NONE   Echelon: BN
Category: LND   Service:
Threat: FRD   Platform:
Flag: BE Number:
Real World / Exercise: REAL-WORLD   OSuffix:
UIC: URN:
Embarked:
Orig XRef:

OK   Cancel   Apply

Brevity Code Alert! - 1BN7MAR

Brevity Code Alert!

1BN7MAR

has reported Codeword:

BLUEBIRD

Acknowledge

# Key Track/Missing Key Track Agent

Key Track names entered by a reporting unit in the "Name" field are "broadcasts" across entire MAGTF C2PC Network.

C2PC MOE monitors all C2PC unit tracks that are being created or deleted. If the tack name matches the Key Track or Missing Key Track list then an Alert is trigger – even if not in current map view.
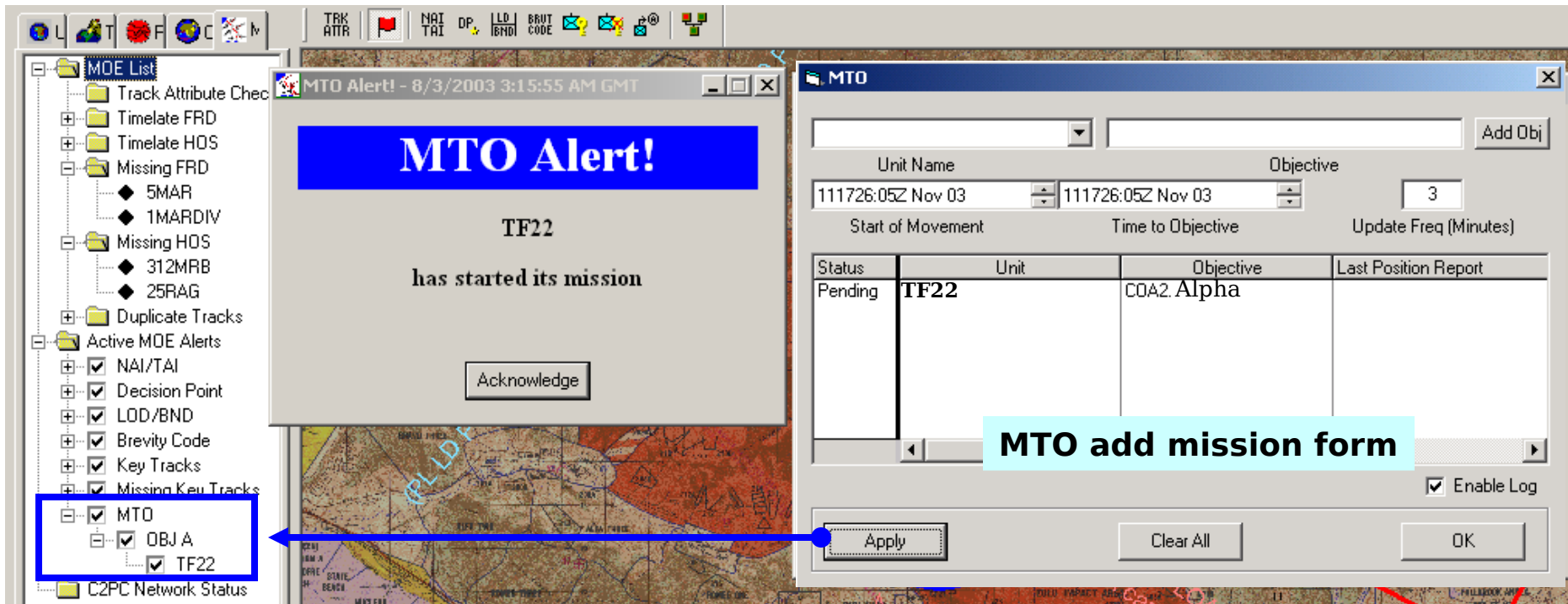
Key Tracks might be a HVT/HPT initial detection/reporting or the unit of main effort.

C2PC MOE records all Key Track alerts in the Key Track

MTO Agent

MTO add mission form
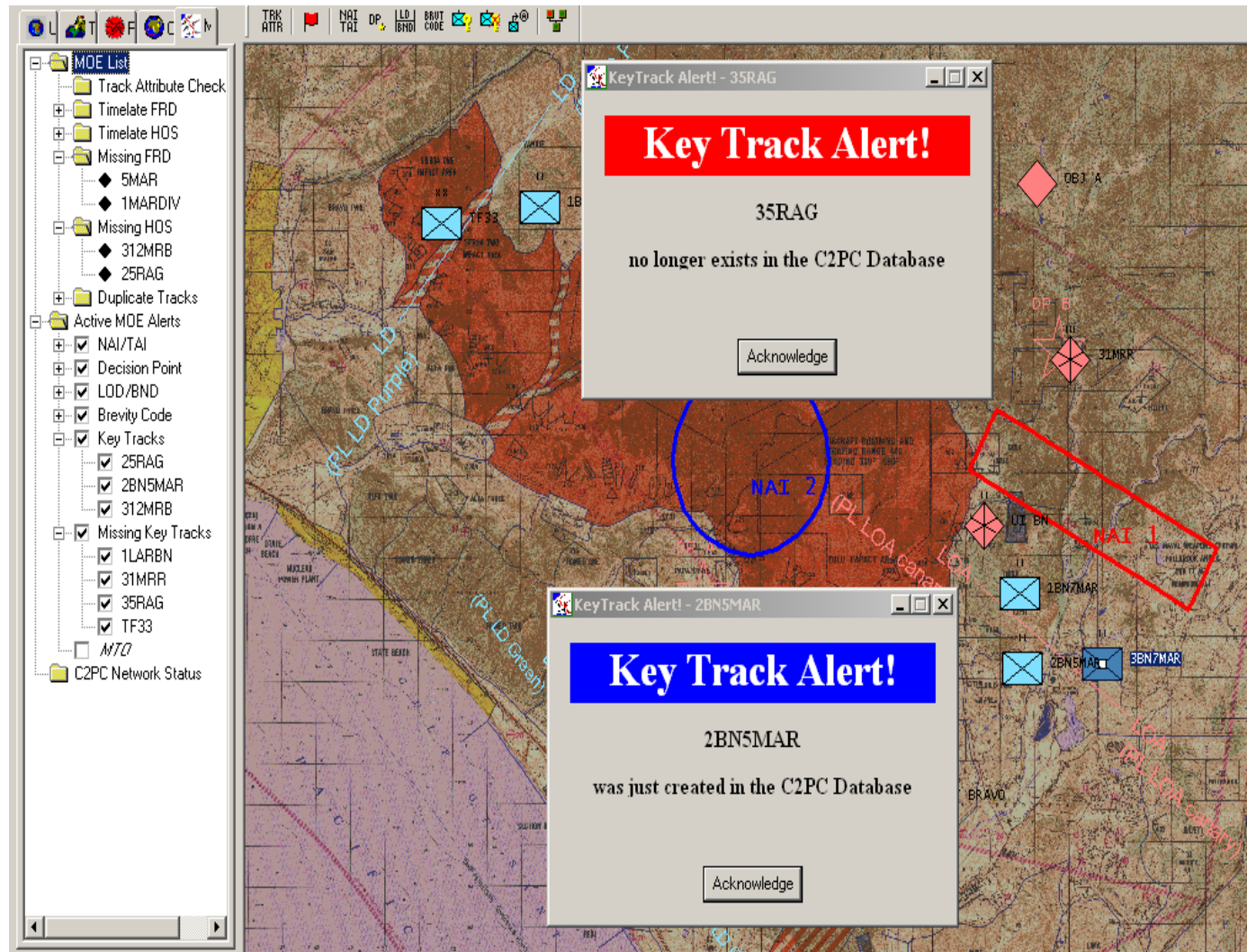
MTO – Movement to Objective – is simple routine that the OPS O can use to monitor a MTO mission from start of movement to the objective (C2PC Objective Overlay).

MTO uses a simple "as the crow flies" algorithm to determine if the unit will make it to the objective at the specified time based on his rate of movement. MTO will also alert if the unit has not moved or moved further away in the specified reporting period.

If unit cannot make it to the objective on time the Commander may have to change his entire battle plan.

Alert Logs (~AAR)

The Alert Logs, if enabled, record each event being alerted based on your MOE criteria. It can be a simple After Action Report of the critical events for the operation.

Each active overlay (DP, NAI, Brevity Code, Key Track, Missing Key Track, MTO, and LOD) has it's own log which can be enabled independently.

There is also an aggregate log.

The log is maintained in the MOE database and can be printed or saved as a "delimited" file so you can import into Excel and conduct refined analysis.

Alerts will be recorded, if enabled on the individual tabs, even when the alert pop-ups are deactivated.
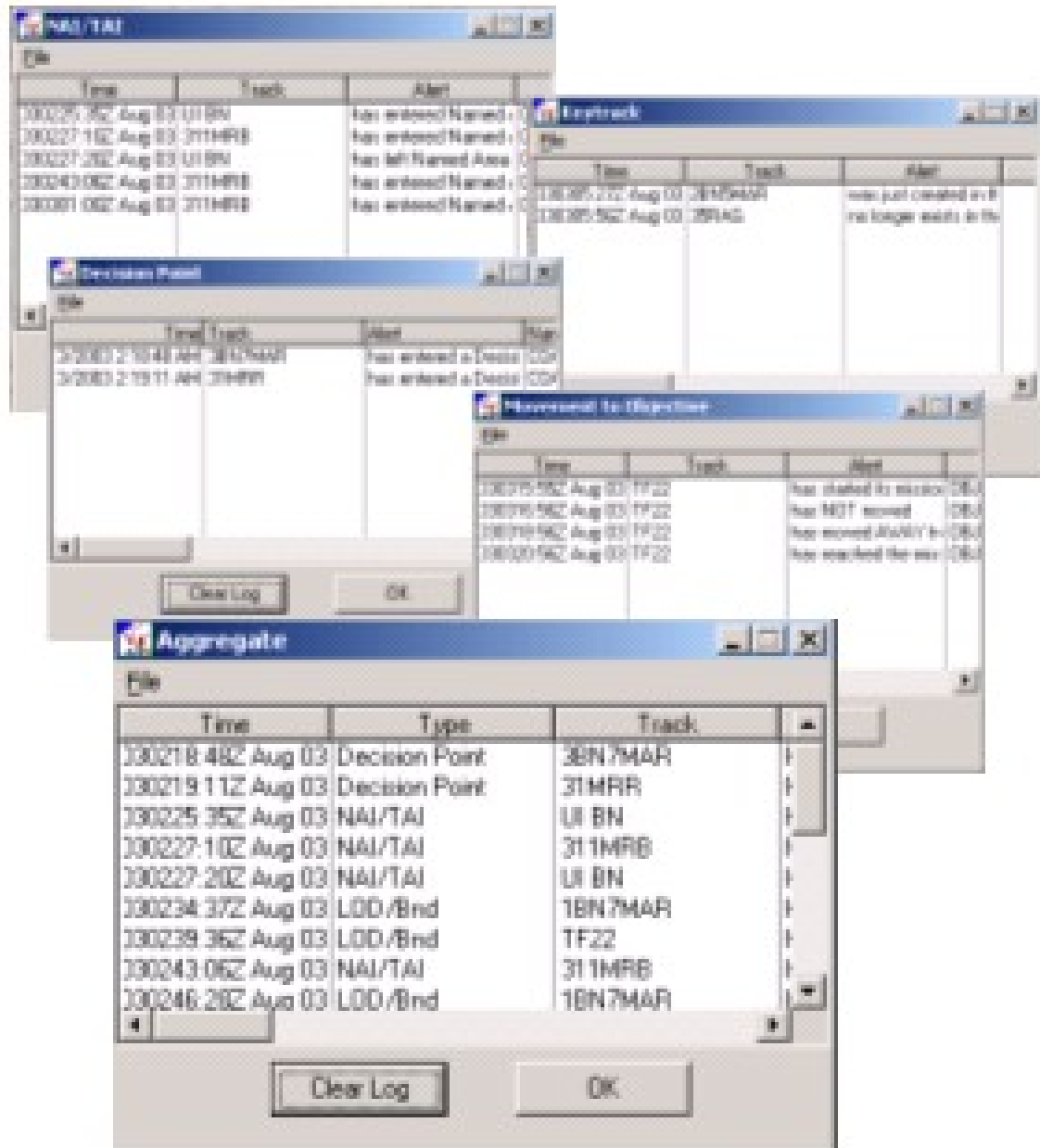
Network Status Agent

The Network Status Agent is a simple ping utility that the Watch Officer/Chief uses to monitor the C2PC reporting units.

Use the "Network Status" form to import or enter the unit name and IP address of each C2PC in your CTP reporting architecture.

Set the Network query interval for auto ping.

The units are added to the network status folder in the C2PC panel to continuously monitor the status of your reporting units
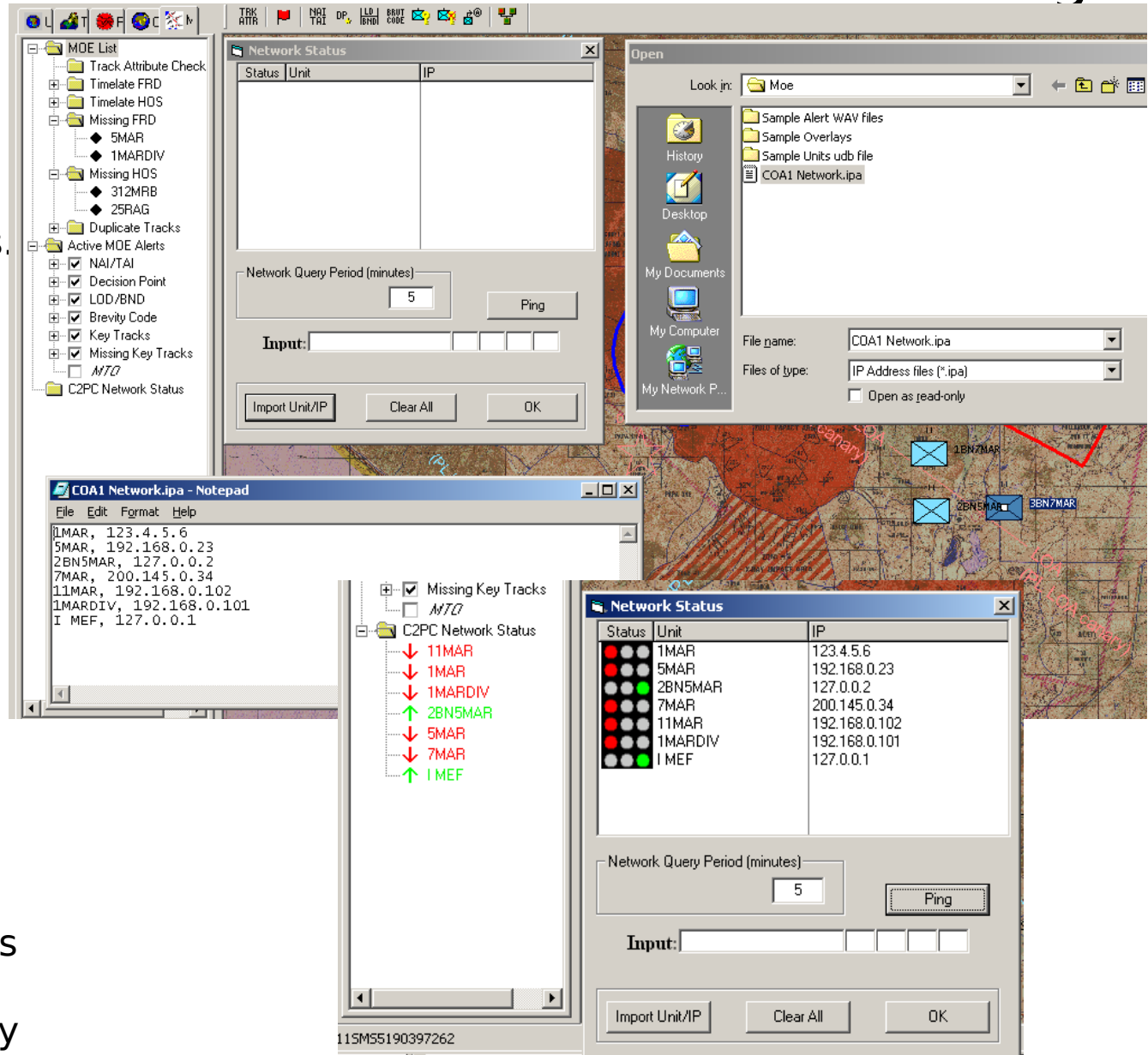
Planned for v2.1

- Upgrade to 6.0 APIs
- Combat Effectiveness attribute check
- Modify Key Track monitoring (create, delete, move)
- Modify Phase line alerts
- Timelate by attributes
- NAI alerts by attributes
- Branching DP alerts
- Hostile unit Danger Close range alerts for specific units

Submit your v2.2 requirements now!

Call or E-mail:
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